United States Environmental Protection Agency
Region 5
Internal Memo

To: Shari Kolak
From: Amy Gahala
Date:11/12/2019
Subject: LCCS Surface Water Sampling Work Plan Indian Ridge Marsh

Shari, I have reviewed the above subject line and below are my comments for your consideration.

Summary: Arcadis submitted a revised work plan that addresses some of EPA's previous comments on their draft work plan. They plan on obtaining more water level data this round, including continuous pressure transducer data for a period of three months. The sampling amount is the same as previously proposed, with 10 samples along the western edge of IRM and 10 background samples located throughout the IRM to compare and contrast the constituent data. Two rounds of surface water samples will be collected.

1. Section 4.1. Evaluation of Temporal Variability in Hydrology: The culvert that IRM drains underneath 122nd street is undersized for the area and oftentimes floods and causes backflow (George Roadcap, oral statement Oct. 30th, 2019). It may be good to add a staff gage closer to this outlet, and another staff gage at the inflow to IRM. This will help gain a greater understanding of the flow dynamics at this site and better inform the sampling locations and results (access might also be easier too).
    a. It is recommended that the transducers deployed at the staff gauge(s) for continuous monitoring have a protective covering fixed to the staff to prevent the transducer from bouncing around in the wind-wave action. I use a 4-inch pvc pipe with drilled out holes throughout the pipe (up to the depth range of the water) to allow water to flow in but serve as a stilling well. This will prevent erroneous readings and potential damage to the transducer.
2. Section 5. Schedule and Reporting: Add in a period for analysis of water level data after three months of data collection. The data should be used to inform the range in water levels and to optimize the sampling locations.
    a. It is recommended to keep the pressure transducers in place until after the final sampling round. The data will be more useful for determining optimum sampling collection periods (baseflow periods preferred over flooding conditions). Also, the data may help to inform chemistry results.
3. Section 4.2 Sample Location Selection: Include discussion of how the water levels will be reviewed, analyzed, and used for selection of optimized sampling locations. This is all we have for interpreting the groundwater to surface water flow direction and serves as a key piece of information for locating the sample collection.
4. The surveyor that will get elevations and lat-long for the staff gages should also get elevations for the two ponds close to Torrence Ave at North Indian Ridge Marsh (where the proposed 'background' samples will be taken). This will better inform the flow

direction and hydrology. This area is extremely complex hydrologically and flow direction should not be assumed. Ideally, staff gages can be installed in all these seemingly isolated ponds where background samples will be collected so that elevations can be understood at the time of sampling. This will make chemistry data interpretations easier (defensible). These additional recommended staff gages do not need continuous data collection.

If you have any questions, please contact me.

Sincerely,

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